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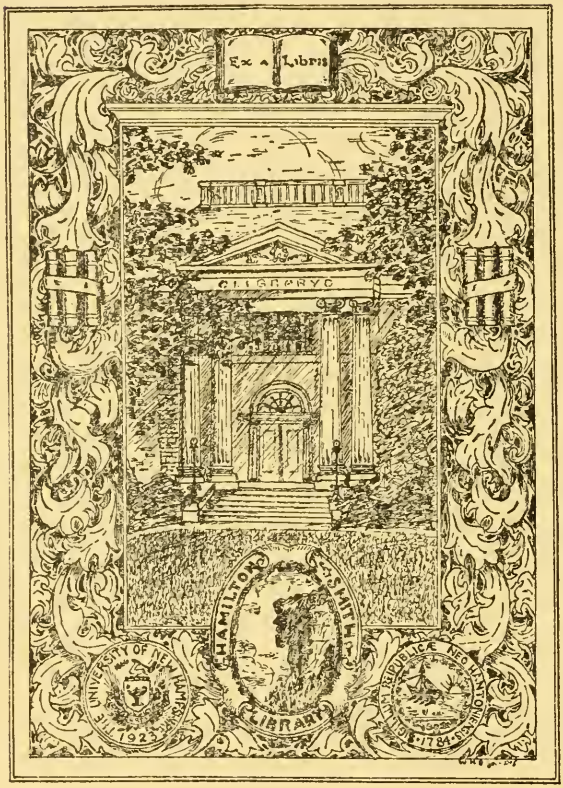

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Bulletin No. 233

March, 1938.

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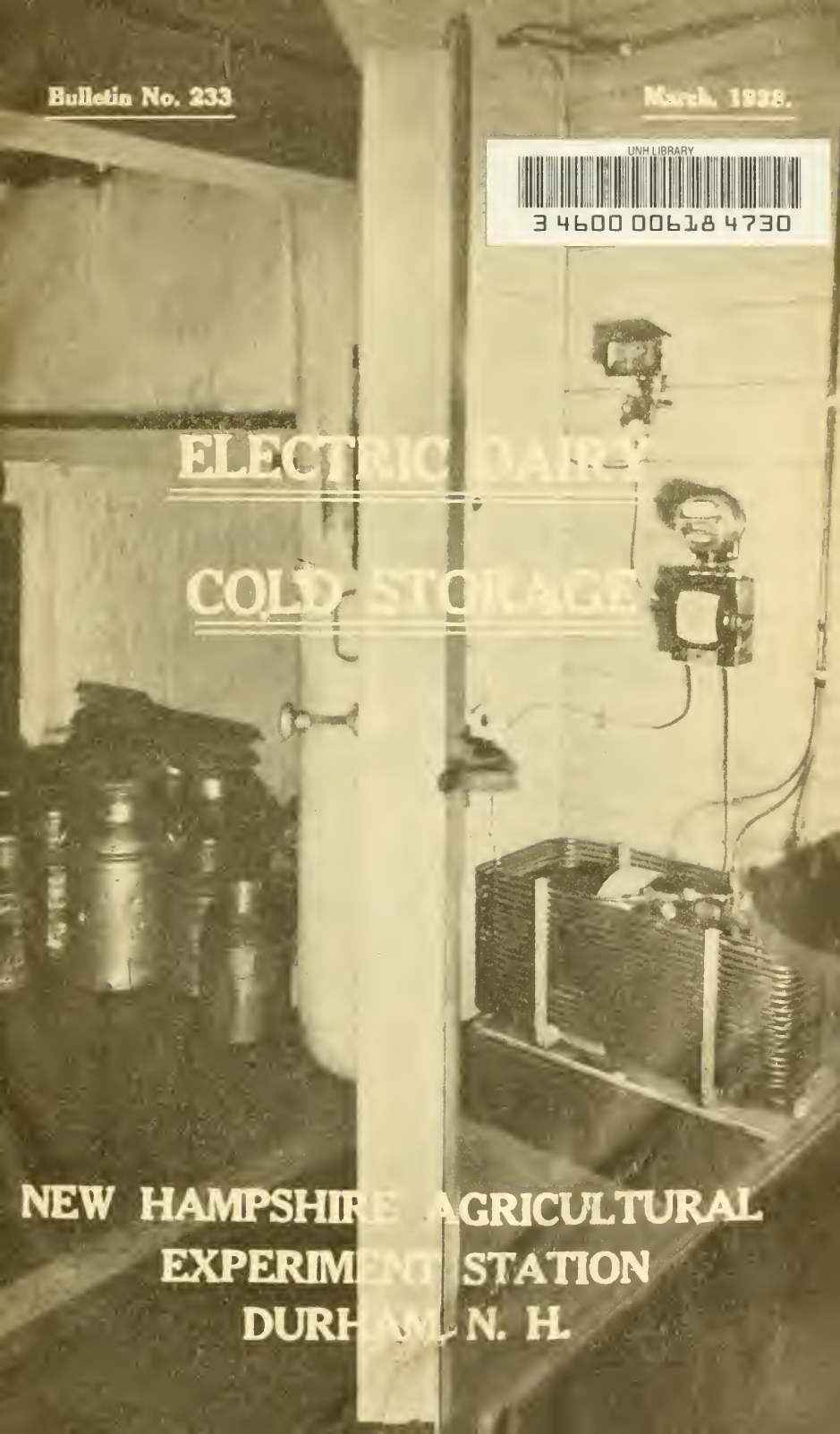

ELECTRIC DAIRY COLD STORAGE

NEW HAMPSHIRE AGRICULTURAL EXPERIMENT STATION
DURHAM, N. H.

[Bulletin 246] ?

RESULTS OF SEED TESTS

Made July 1, 1928 to June 30, 1929

The total number of seed samples tested in the Experiment Station laboratory this year was three hundred eighty-six. Of this number three hundred thirty-one were official and are reported in this bulletin. In addition to these, fifty-five private lots were tested. The official samples were collected by an agent employed by the Commissioner of Agriculture and sent to the seed testing laboratory where purity analyses and germination tests were made in order to ascertain if each sample was of as good quality as its accompanying guarantee indicated.

A certain amount of variation is always to be expected in comparing two or more tests of seeds. There may be some lack of uniformity in the product itself under the most exacting methods of sampling; and always the human factor, together with the moisture, temperature, light, etc., of the mechanical equipment involved in making germination and purity tests may contribute some small element of variation in spite of the most rigorous attention to details and the very skillful use of the most sensitive apparatus. In the tests this year, as usual, due allowances have been made for such unavoidable errors. Rather exhaustive trials of each sample of apparent poor quality have been carried out. Every effort is made to give each package of seed the benefit of the doubt until such time as repeated trials and comparisons with other similar seeds of known quality have proved our environmental investigational conditions all right and the sample under consideration unquestionably at fault. The usual allowances for both purity and germination were explained in detail in last year's bulletin and will not be repeated here.

The summary table on the last page will show the general results of the seed inspection work for the year ending June 30, 1929. It may be noted that a large propor-

tion of the samples was found to be as represented. In purity 88 percent was found satisfactory or better, and in germination 84 percent. This year a much larger percent of the red clover samples was found below in both purity and germination than last year. This statement also applies to red top. When all the different kinds of seeds are considered, the percent found low has not increased over last year's figures significantly, perhaps, but it indicates a lack of decided improvement, at least, which might be possible and desirable.

THE PURPOSE OF SEED TESTING

To the dealer who feels that seed testing requirements add just so much more routine to his already overburdened list of details, as well as to the farmer who seldom looks at this bulletin or even at the guarantee tags on the seed he buys, all our efforts may sometimes seem mere wasted energy. And yet, in general, seed testing has been, and is a most potent factor for good to the individuals in both these lines of business. Each is afforded an opportunity to know more about the product he is handling. The dealer who intends to sell only the best is protected against buying inferior seed as well as from the unwarranted suspicion of the farmer who has experienced a crop failure of uncertain origin. Few people, indeed, can detect by observation appreciable quantities of dirt or weeds in various species of seeds and no one can successfully prophesy as to the viability of seeds except by making actual germination tests. The details necessary for getting reasonably uniform results in the sprouting of some of our common plants is little appreciated. Kentucky bluegrass requires about a month to complete a germination test, for example, and all this time certain temperature and moisture conditions must be carefully provided. And, again, not a single uniform temperature but alternating from "hot" to "cold", 68° to 86°, and back

again once a day for the whole period. Uniform moisture must be provided also, not alone by an absorbent substratum like cloth or blotting paper placed in a saturated atmosphere but by means of capillary wicks suspended in an adjacent free water surface. Canada bluegrass requires a glass germinator for controlling temperature and moisture in order that it may be flooded with light, either natural or artificial, for a certain period of each day. Some seeds require, for best results, absorbent cotton for a substratum rather than blotting paper or cloth. Ordinary lettuce represents such a species. Certain kinds respond better when the substratum is wet with a very weak solution of potassium nitrate, but in nearly all cases pure water only is used for moisture. Ordinary blotting paper, even when pure white, is often fatal to well known species like timothy because of alum or other soluble salts commonly employed in its manufacture. To guard against this difficulty, only the most carefully prepared blotting paper, especially manufactured for the purpose, is used. Ours is obtained from a large manufacturer in Washington, D. C.

Purity tests require a corresponding amount of care and attention to detail. Careful sampling in the store, and correct division of the sample in the laboratory are important preliminaries to accuracy in this phase of the work. For each of these purposes, special instruments and machines are provided. It is not enough to be able to tell pure seed from adulterants, difficult enough in many cases, but the analyst must also distinguish between the imperfect glumes of such seeds as oats, redtop, bluegrass and similar species, and the glumes which inclose a perfect seed of potential germinative capacity. These species which ordinarily carry chaffy glumes covering the seed proper, as threshed from the straw and as best protected against molds and other diseases for planting purposes, often provide apparently healthy seeds which reveal nothing but empty glumes on careful examination. This distinction

may be made by gravity sometimes in a specially constructed blower, sometimes by appearance under a hand lens, and often only by pressure on each individual seed with a pair of forceps held in the hand.

Nowadays little really poor seed is likely to be found on the market. The wholesaler strives to handle only such quality of seeds as evidence a good guarantee and live up to that guarantee with sufficient uniformity to meet the requirements of all the seed testing stations in the country. A few cases have come to our attention in recent years, however, particularly with mixtures like lawn grasses, in which an apparent attempt has been made to pass chaff or empty glumes for good seed or to include species of doubtful value for the purpose suggested. It is to the credit of our local retail stores to state that samples of these mixtures are often sent to us for a preliminary examination and consequently fail to find a market for the product in New Hampshire. Another cogent reason for poor seeds and for discrepancies between the tests and the guarantees is the carrying over of seeds by the retailer from year to year. The State Law requires on the label the date when tested, which tends to alleviate this difficulty, as both farmers and merchants realize that seed deteriorates more or less with age. Our best dealers send to the laboratory regularly every spring samples from all seed left over from the previous year. Of course the purity does not change materially unless disease or insect injury occurs, but a new test on germination provides a basis for judging whether to sell the seed for feed, or to put it on the market again with a new label revised to date.

Our law does not prevent the sale of seed which is of very poor quality so long as it is labeled such. In this case the farmer needs to read the guarantee. If a sample is only 50 per cent pure seed and 50 per cent germinable then 75 per cent of what he buys is worthless or worse. Half the pure seed he knows will not germinate and half of

the sample is not the seed he wants at all, and quite possibly, is a potential source of many undesirable weeds. Seed that has deteriorated with age from a good test is of questionable vitality, possibly, even though it may evidence 50 per cent of apparently healthy sprouts under the most ideal conditions of the laboratory. In general, most of the farmer's problems of good quality seeds for the common field crops like grasses, grains, and legumes are taken care of in spite of him. Properly guaranteed by a law which requires the label to be truthful, and checked up by a State inspection which is likely to prohibit its sale if found delinquent in any respect, the standards of quality in agricultural seeds are automatically kept high. Only an occasional oversight, lack of appreciation, or possible gross neglect on the part of the vender can result in the farmer's obtaining poor seed.

Before seed testing was in vogue, quite in contrast were the conditions. And it is well to suggest some of the olden practices as indices of what might happen in our present complicated state of society if none of our regulatory measures were in effect. A common method of adulterating small farm seeds was to use those of weeds which had first been heated sufficiently to kill their powers of germination. The killing of the weed seeds was done in the interests of the seller rather than for the farmer. The adulteration with half weed seeds would be less conspicuous if none of them grew. In Europe, at least, sand was graded and colored to resemble clover seeds and used for filler. It had the advantage of being very heavy when sold by weight, in addition to being lifeless. Such were some of the gross malpractices perpetrated on the farmer by unscrupulous commercial concerns in the days much less than a century past before seed testing came in as a proper preventative. In the experience of our own State only a few years since, under a law which was much less satisfactory than the one we now have and before our methods and equipment for

seed testing were as well perfected as they are today, some careless if not malicious practices were common. It was not unusual to find Kentucky bluegrass seed copiously adulterated with the much cheaper Canada bluegrass. Although the seeds are very similar, the cheaper species is much inferior for most purposes for which Kentucky is recommended. The two seeds are never mixed by nature if for no other reason than that they mature at different times of year. Again, white clover, red clover, and alfalfa seeds were occasionally found germinating less than 10 per cent; in one case only 1 or 2 per cent. These low germinations were usually traceable to poor storage conditions or extremely old seed as a result of inefficient and careless retailing. That one company was selling seed that had been in its store for some five or six years was proved by the wholesaler's records. This particular dealer had not replenished his supply in that length of time.

The seed inspection work then is rather far reaching in its effects, and if it fails to develop anything spectacular or pretentious may nevertheless be serving its purpose. In fact, in so far as our commercial seed for farm purposes complies with the law and thus keeps its venders out of difficulty, everybody should be reaping due satisfaction both from the seed business and from the regulations relating thereto. It is far from the intention of the State to harass or unnecessarily inconvenience any person engaged in the seed business, but only to see that competition among dealers is fair and that the farmer buys the goods for which he bargains. Good seed and honest intentions combined with careful merchandising practices should make this condition possible at all times for all persons concerned, and should make them welcome the intervention of the law at any time when other intentions with other merchandise tend to prevail. It is only the careless or occasionally dishonest person that makes regulartory measures necessary.

The seed testing laboratory also makes tests free of charge for farmers who wish to sell their own seeds in conformity with the law, or have seeds on hand for planting concerning the quality of which they may be uncertain.

SEED EXAMINATION, 1929

Sample No.	Kind of Seed, Brand, Name and Address of Dealer	Purity		Germination	
		F'nd	Guaranteed	F'nd	Guaranteed
7276	Alfalfa (2359, Grimm) ..... Chase Grain Mill, Plymouth	S	99.78	S	94
7151	Alfalfa (27673, Idaho Grimm) ..... J. Cushing Co., Exeter	S	99.50	S	92
7060	Alfalfa (Pan American) ..... J. H. Griffin, Newmarket	S	99.50	S	90
7103	Alfalfa (Grimm, Certified Blackfoot) C. M. Hildreth & Son, Lebanon	S	99	77	90
7210	Alfalfa (Ontario Variegated) ..... F. W. Neal & Co., Dover	S	99.50	70	90
7211	Alfalfa (Genuine Grimm) ..... F. W. Neal & Co., Dover	S	99.50	S	90
7372	Alfalfa (27702, Pedigreed) ..... D. A. Noyes & Son, Colebrook	S	99.50	88	—
7067	Alfalfa (Grimm, 2647) ..... John B. Varick Co., Manchester	S	99.70	A	77
7079	Alfalfa (Grimm) ..... John B. Varick Co., Manchester	A	99	S	88
7295	Alsike (2115, Pine Tree) ..... Ayers & Jenkins, Rochester	S	97	S	93
7262	Alsike (Eureka) ..... Belknap Co. Farmers' Exchange, Laconia	S	98	S	90
7332	Alsike (8117) ..... Chase Grain Mill, Plymouth	95.34	98.65	S	87
7184	Alsike (Ace, 021614) ..... J. Cushing Co., Portsmouth	S	95	S	90
7218	Alsike (Extra Fancy White Mtn.) .. G. H. Eames & Son, Keene	S	97	S	90
7331	Alsike (S107, Fullwerth) ..... Farmers' Grain Store, Ashland	S	97.75	S	90
7114	Alsike (Pan American) ..... S. J. Ford, Danbury	S	97	S	88
7299	Alsike ..... E. C. Foss Co., Rochester	S	97	S	90
7113	Alsike (Pan American) ..... C. M. Hildreth & Son, Lebanon	S	97	S	90
7143	Alsike ..... Hilliard & Kimball, Exeter	A	94.05	S	90
7312	Alsike (Ace) ..... Keegan & French, Franklin	S	95	26	90
7165	Alsike (Pan American) ..... J. A. Lane & Co., Hampton	S	97	S	90
7219	Alsike (9973, Pine Tree) ..... McQuesten & Lewis, Manchester	S	97.30	80.5	98
7309	Alsike (21449, Pine Tree) ..... Meredith Grain Co., Meredith	S	98	S	94
7130	Alsike (Pan American) ..... R. P. Merrill, Hampton Falls	S	97	S	90
7241	Alsike (21338, Ace) ..... Merrimack Farmers' Exchange, Concord	S	95	S	92
7069	Alsike (Pan American) ..... J. J. Moreau & Son, Manchester	S	97.50	S	90
7261	Alsike (Pan American) ..... Muzzey & Hopkins, Lakeport	S	97	S	90
7231	Alsike (Pan American) ..... Nashua Grain Co., Nashua	S	97	S	90

A=Above S=Satisfactory

SEED EXAMINATION, 1929—Continued

Sample No.	Kind of Seed, Brand, Name and Address of Dealer	Purity		Germination	
		F'nd	Guaranteed	F'nd	Guaranteed
7208	Alsike (3433) ..... F. W. Neal & Co., Dover	S	97	81	97
7373	Alsike (21417, Pine Tree) ..... D. A. Noyes & Son, Colebrook	S	97.55	S	93
7260	Alsike (6711, Liberty) ..... Rand & Dearborn, Laconia	S	97	S	85
7176	Alsike (Ace, 21184) ..... J. H. Seavey, Dover	S	97.75	84.5	95
7367	Alsike (21729—30) ..... Frank Smith Co., Lancaster	97.44	99.10	S	94
7366	Alsike (21427) ..... F. B. Spaulding Co., Lancaster	S	97.65	S	93
7259	Alsike (3651, Liberty) ..... C. P. Stevens Co., Franklin	S	97	S	85
7285	Alsike ..... Strafford Co. Grain Mill, Rochester	S	98	S	90
7056	Alsike ..... A. J. Turcotte, Newmarket	95.74	98	83.5	95
7081	Alsike (Ace, 2118) ..... John B. Varick Co., Manchester	S	95	S	92
7282	Alsike (10003) ..... E. T. Willson, Farmington	A	92.01	S	96
7141	Alsike (Pan American) ..... W. A. Young, Exeter	S	97	S	90
7273	Barley (Hygrade, 6-row) ..... Chase Grain Mill, Plymouth	S	99	S	97
7339	Barley (71179, 6-row) ..... The Depot Store, Inc., Littleton	S	98.50	A	86
7350	Barley (White Mtn., 2-row) ..... Holbrook Grocery Co., Woodsville	S	98	S	90
7181	Barley (Chevalier, 71127) ..... Jenness Hardware Co., Dover	S	97.20	S	94
7152	Barley (71321, 6-row) ..... Merrimack Farmers' Exchange, Exeter	S	98.50	S	96
7204	Barley (2-row, State) ..... F. W. Neal & Co., Dover	S	98	S	90
7356	Barley (071641, 2-row) ..... D. A. Noyes & Son, Colebrook	S	97	S	94
7341	Barley (071646, 6-row) ..... Pike & Gale, Littleton	S	97	S	93
7207	Barley (6-row) ..... S. A. Schurman & Son, Portsmouth	S	98	S	90
7203	Barley (6-row, 071575) ..... J. H. Seavey, Dover	S	99.30	S	95
7258	Barley (3618, 6-row) ..... C. P. Stevens Co., Franklin	S	99	S	97
7249	Barley (71330, 6-row) ..... Thompson & Hoague Co., Concord	S	99.40	S	95
7074	Barley (6-row, 71162) ..... John B. Varick Co., Manchester	S	98.16	A	74
7092	Barley (71309, 6-row) ..... John B. Varick Co., Manchester	S	98.50	S	95
7353	Bluegrass, Canada, (033547) ..... Holbrook Grocery Co., Woodsville	S	88	S	85
7147	Bluegrass, Kentucky ..... Hilliard & Kimball, Exeter	S	78	S	72
7201	Bluegrass, Kentucky ..... J. H. Seavey, Dover	76.22	84.40	S	73

A=Above S=Satisfactory

SEED EXAMINATION, 1929—Continued

Sample No.	Kind of Seed, Brand, Name and Address of Dealer	Purity		Germination	
		F'nd	Guaranteed	F'nd	Guaranteed
7167	Buckwheat, Japanese S. A. Dow & Son, North Hampton	S	98	S	90
7328	Buckwheat, Japanese (6713) C. P. Stevens Co., Franklin	S	98	S	97
7080	Buckwheat, Japanese (7676) John B. Varick Co., Manchester	S	99.75	S	90
7214	Canada Field Peas F. W. Neal & Co., Dover	S	98	S	90
7175	Canada Field Peas (85169) J. H. Seavey, Dover	S	99.50	S	92
7111	Corn (Kato) Lewis Bros., Lebanon	—	—	52.5	90
7161	Millet, Golden (Fancy) S. A. Dow & Son, North Hampton	S	99	S	90
7205	Millet, Golden S. A. Schurman & Son, Portsmouth	S	99	75	90
7294	Millet, Hungarian (4760) Ayers & Jenkins, Rochester	S	98.90	79	90
7301	Millet, Hungarian (47—54) Ayers & Jenkins, Rochester	S	99	S	90
7223	Millet, Hungarian (Fancy) Bell Hardware Co., Derry	S	99	S	90
7283	Millet, Hungarian P. W. Bragg, Farmington	S	98	S	88
7277	Millet, Hungarian O. A. Brown, Ashland	S	99	S	84
7374	Millet, Hungarian F. P. Brown, Whitefield	S	98	S	82
7275	Millet, Hungarian (3001) Chase Grain Mill, Plymouth	A	98	S	85
7166	Millet, Hungarian The E. A. Cole Co., Hampton	S	98	66	80
7154	Millet, Hungarian (4777) J. Cushing Co. Exeter	A	97.40	S	80
7226	Millet, Hungarian J. Cushing Co., Nashua	S	98.36	S	80
7158	Millet, Hungarian (Fancy) S. A. Dow & Son, North Hampton	A	98	73.5	88
7338	Millet, Hungarian (4791) The Depot Store, Inc., Littleton	S	99	S	86
7337	Millet, Hungarian (8801) Farmers' Grain Store, Ashland	S	99	S	90
7304	Millet, Hungarian (Fancy) E. C. Foss Co., Rochester	97.20	99	S	90
7050	Millet, Hungarian (Fancy) J. H. Griffin, Newmarket	94.99	99	25	90
7101	Millet, Hungarian C. M. Hildreth & Son, Lebanon	S	99	66	88
7173	Millet, Hungarian (4792) Jenness Hardware Co., Dover	98.59	99.86	S	85
7300	Millet, Hungarian (Fancy) J. Jones & Son, Alton	S	99	65	85
7279	Millet, Hungarian J. Jones & Son, Alton	S	98	S	88
7109	Millet, Hungarian (xx) Lewis Bros., Lebanon	A	98	69	90
7324	Millet, Hungarian (4791) Meredith Grain Co., Meredith	98.55	99.40	S	90

A=Above S=Satisfactory

SEED EXAMINATION, 1929—Continued

Sample No.	Kind of Seed, Brand, Name and Address of Dealer	Purity		Germination	
		F'nd	Guaranteed	F'nd	Guaranteed
7272	Millet, Hungarian (4761) ..... C. N. Merrill & Sons, Bristol	98.32	99.30	78	88
7066	Millet, Hungarian (Fancy) ..... J. J. Moreau & Son, Manchester	S	99	60	90
7228	Millet, Hungarian ..... Nashua Grain Co., Nashua	S	99	S	90
7185	Millet, Hungarian ..... S. A. Schurman & Son, Portsmouth	S	99	S	90
7191	Millet, Hungarian (4770) ..... J. H. Seavey, Dover	S	98.70	58	80
7376	Millet, Hungarian (4760) ..... Frank Smith Co., Lancaster	S	98.90	S	90
7375	Millet, Hungarian (4792) ..... F. B. Spaulding Co., Lancaster	S	98.85	S	85
7329	Millet, Hungarian (259) ..... C. P. Stevens Co., Franklin	S	98.80	S	88
7248	Millet, Hungarian (4788) ..... Thompson & Hoague Co., Concord	S	98.04	S	90
7055	Millet, Hungarian ..... A. J. Turcotte, Newmarket	S	98	1.5	93
7090	Millet, Hungarian (6663) ..... John B. Varick Co. Manchester	S	99.54	S	82
7319	Millet, Hungarian (4772) ..... F. H. Veroneau & Co., Penacook	A	97	S	83
7290	Millet, Hungarian ..... E. T. Willson, Farmington	S	98.36	S	80
7142	Millet, Hungarian (Fancy) ..... W. A. Young, Exeter	S	99	59	90
7150	Millet, Hungarian (259) ..... W. A. Young, Exeter	S	98.80	S	88
7240	Millet, Japanese (1028) ..... Abbott Grocery Co., Keene	S	97.30	S	90
7296	Millet, Japanese (55—C 29. Page's) Ayers & Jenkins, Rochester	S	97.81	S	87
7256	Millet, Japanese ..... Belknap Co. Farmers' Exchange, Laconia	S	97.52	S	85
7227	Millet, Japanese (Fancy) ..... Bell Hardware Co., Derry	94.57	97	S	90
7217	Millet, Japanese ..... P. W. Bragg, Farmington	A	96	S	89
7365	Millet, Japanese ..... F. P. Brown, Whitefield	A	96	S	89
7278	Millet, Japanese (743) ..... W. B. Brown, Ashland	S	96.38	S	80
7303	Millet, Japanese (35—28) ..... Freeman Carson, Rochester	S	96.70	S	88
7198	Millet, Japanese ..... R. L. Costello, Portsmouth	S	93	70	86
7364	Millet, Japanese (Fancy) ..... G. B. Currier Co., Colebrook	92.93	97	S	88
7135	Millet, Japanese ..... J. Cushing Co., Exeter	S	95	S	86
7215	Millet, Japanese ..... J. Cushing Co., Nashua	A	95	S	90
7340	Millet, Japanese (Fancy) ..... The Depot Store, Inc., Littleton	93.70	96	S	88

A=Above S=Satisfactory

SEED EXAMINATION, 1929—Continued

Sample No.	Kind of Seed, Brand, Name and Address of Dealer	Purity		Germination	
		F'nd	Guaranteed	F'nd	Guaranteed
7235	Millet, Japanese Derry Farmers' Exchange, Derry	S	97.40	74	95
7336	Millet, Japanese (8800, Fullwerth) Farmers' Grain Store, Ashland	94.13	96.56	S	94
7099	Millet, Japanese (Fancy) S. J. Ford, Danbury	S	97	S	98
7321	Millet, Japanese (2472) C. J. Goss, Lakeport	S	95.87	S	85.5
7053	Millet, Japanese (Fancy) J. H. Griffin, Newmarket	A	97	S	90
7119	Millet, Japanese (Fancy) C. M. Hildreth & Son, Lebanon	95.40	97	S	88
7351	Millet, Japanese Holbrook Grocery Co., Woodsville	S	97.31	S	90
7192	Millet, Japanese (4474) Jenness Hardware Co., Dover	S	99.51	S	85
7314	Millet, Japanese (Fancy) Keegan & French, Franklin	A	96	S	85
7318	Millet, Japanese Keegan & French, Franklin	95.02	98	S	88
7159	Millet, Japanese (Fancy) J. A. Lane & Co., Hampton	95.55	97	S	90
7233	Millet, Japanese LeBlanc & Kaskadiner, Nashua	S	96	S	85
7323	Millet, Japanese (4486) Meredith Grain Co., Meredith	S	98.54	S	85
7265	Millet, Japanese C. N. Merrill & Sons, Bristol	93.87	96	A	80
7136	Millet, Japanese (Fancy) R. P. Merrill, Hampton Falls	S	96	70	90
7065	Millet, Japanese J. J. Moreau & Son, Manchester	94.40	97	S	90
7232	Millet, Japanese (Fancy) Nashua Grain Co., Nashua	S	95	67.5	80
7209	Millet, Japanese (Fancy) F. W. Neal & Co., Dover	S	97	S	90
7195	Millet, Japanese S. A. Schurman & Son, Portsmouth	93.86	97	S	88
7202	Millet, Japanese (44—113) J. H. Seavey, Dover	A	96.50	S	90
7361	Millet, Japanese (4457) Frank Smith Co., Lancaster	95.42	96.84	S	80
7362	Millet, Japanese (4483) F. B. Spaulding Co., Lancaster	S	95.35	S	94
7250	Millet, Japanese (4482) Thompson & Hoague Co., Concord	S	96.55	S	90
7064	Millet, Japanese A. J. Turcotte, Newmarket	95.55	98	S	90
7078	Millet, Japanese John B. Varick Co., Manchester	S	97	S	87
7084	Millet, Japanese (4477) John B. Varick Co., Manchester	S	97.65	S	90
7363	Millet, Japanese (Fancy) H. K. Webster Co., Colebrook	95.39	97	S	90
7288	Millet, Japanese E. T. Willson, Farmington	S	97.50	S	85
7140	Millet, Japanese (Fancy) W. A. Young, Exeter	S	98	S	88

A=Above S=Satisfactory

SEED EXAMINATION, 1929—Continued

Sample No.	Kind of Seed, Brand, Name and Address of Dealer	Purity		Germination	
		F'nd	Guaranteed	F'nd	Guaranteed
7149	Millet, Japanese (1028) W. A. Young, Exeter	94.83	97.31	S	90
7297	Oats (Page's Marvel) Ayers & Jenkins, Rochester	S	99	S	89
7330	Oats (Barco Brand) A. H. Barney, Franklin	S	99.50	S	96
7255	Oats (Swedish Type) Belknap Co. Farmers' Exchange, Laconia	S	97.77	S	94
7257	Oats (Granite State) Belknap Co. Farmers' Exchange, Laconia	S	98.50	S	91
7225	Oats (Selected) Bell Hardware Co., Derry	S	98	S	90
7266	Oats (73113, White Mtn. Extra Fancy, Am.) W. B. Brown, Ashland	S	97	S	94
7326	Oats (Barco Brand) W. E. Dunbar & Sons, Manchester	S	99.50	S	96.30
7054	Oats (Swedish) J. H. Griffin, Newmarket	S	98	S	96
7352	Oats (73131, Heavey Domestic) Holbrook Grocery Co., Woodsville	S	99.50	S	94
7170	Oats (Swedish Type, 73114) Jenness Hardware Co., Dover	S	97.50	S	94
7156	Oats (Hygrade Fancy) J. A. Lane & Co., Hampton	S	99	S	97
7132	Oats R. P. Merrill, Hampton Falls	S	98	S	90
7239	Oats (73350 Swedish Type) Merrimack Farmers' Exchange, Concord	S	99.08	S	98
7137	Oats (Natural) Merrimack Farmers' Exchange, Exeter	S	95	S	95
7213	Oats (Welcome) F. W. Neal & Co., Dover	S	99	S	98
7197	Oats (Pennant) S. A. Schurman & Son, Portsmouth	S	99.50	S	96
7190	Oats (073536) J. H. Seavey, Dover	S	98.36	S	96
7317	Oats (Swedish, 61734) C. P. Stevens Co., Franklin	S	95	S	95
7057	Oats A. J. Turcotte, Newmarket	S	98	S	97
7091	Oats (Swedish Type) John B. Varick Co., Manchester	S	99	S	90
7355	Oats (Blue Seal) H. K. Webster Co., Colebrook	S	97	S	90
7287	Oats (Welcome) E. T. Willson, Farmington	S	99	88	99
7093	Orchard Grass (Ace) John B. Varick Co., Manchester	A	83	68.5	80
7097	Rape (Dwarf Essex) C. M. Hildreth & Son, Lebanon	S	98	S	90
7068	Rape (Dwarf Essex) J. J. Moreau & Son, Manchester	S	98	S	90
7200	Rape (Dwarf Essex) J. H. Seavey, Dover	S	99.76	S	89

A=Above S=Satisfactory

SEED EXAMINATION, 1929—Continued

Sample No.	Kind of Seed, Brand, Name and Address of Dealer	Purity		Germination	
		F'nd	Guaranteed	F'nd	Guaranteed
7379	Red Clover (Imported) ..... Abbott Grocery Co., Keene	A	98.25	A	85
7291	Red Clover (24290—91, Medium) .... Ayers & Jenkins, Rochester	S	99	S	94
7253	Red Clover (Domestic) ..... Belknap Co. Farmers' Exchange, Laconia	S	99	S	90
7224	Red Clover (Pan American, French) Bell Hardware Co., Derry	S	98.50	63.5	90
7274	Red Clover ..... O. A. Brown, Ashland	A	98	S	92
7271	Red Clover (White Mtn. Medium) .. W. B. Brown, Ashland	A	99	S	92
7268	Red Clover (6621, Fancy French) .. Chase Grain Mill, Plymouth	98.33	99.22	S	86.50
7155	Red Clover (24391, Ace, Medium Domestic ..... J. Cushing Co., Exeter	A	98	S	92
7193	Red Clover (Ace, Medium Domestic, 241211) ..... J. Cushing Co., Portsmouth	S	98.38	S	90
7327	Red Clover (Imported) ..... W. E. Dunbar & Sons, Manchester	S	99.75	S	94
7333	Red Clover (8322x Medium) ..... Farmers' Grain Store, Ashland	96.09	99.50	S	90
7100	Red Clover (Pan American, French). S. J. Ford, Danbury	S	98	S	90
7293	Red Clover (Pan American) ..... E. C. Foss Co., Rochester	S	98.50	76	90
7061	Red Clover ..... J. H. Griffin, Newmarket	96.95	98.50	63.5	90
7102	Red Clover (Pan American, Domestic) C. M. Hildreth & Son, Lebanon	S	98.50	S	90
7122	Red Clover (Eureka) ..... C. M. Hildreth & Son, Lebanon	S	99.25	S	90
7123	Red Clover (Pan American, Domestic) C. M. Hildreth & Son, Lebanon	97.69	99	S	90
7144	Red Clover ..... Hilliard & Kimball, Exeter	S	98.76	S	95
7347	Red Clover (Domestic) ..... Holbrook Grocery Co., Woodsville	S	97.32	S	91
7348	Red Clover (Imported) ..... Holbrook Grocery Co., Woodsville	A	98.25	S	85
7349	Red Clover (241380, Sp. Medium Domestic) ..... Holbrook Grocery Co., Woodsville	S	98	S	93
7174	Red Clover, Idaho Grown, 241043—44 Jenness Hardware Co., Dover	S	99	A	86
7307	Red Clover (Domestic) ..... Keegan & French, Franklin	A	98.50	S	90
7163	Red Clover (Pan American, Domestic) J. A. Lane & Co., Hampton	97.77	99	S	90
7108	Red Clover (Ace, Domestic Medium, 24197) ..... Manchester Hardware Co., Manchester	97.75	98.90	S	93
7269	Red Clover ..... C. N. Merrill & Son, Bristol	S	98.50	S	90

A=Above S=Satisfactory

SEED EXAMINATION, 1929—Continued

Sample No.	Kind of Seed, Brand, Name and Address of Dealer	Purity		Germination	
		F'nd	Guaranteed	F'nd	Guaranteed
7146	Red Clover (Pan American) ..... R. P. Merrill, Hampton Falls	96.85	98.50	38	90
7243	Red Clover (23466, Ace Mammoth).. Merrimack Farmers' Exchange, Concord	S	98.52	A	80
7245	Red Clover (241042, Ace) ..... Merrimack Farmers' Exchange, Concord	S	98.75	S	92
7070	Red Clover (Pan American) ..... J. J. Moreau & Son, Manchester	S	98	S	90
7267	Red Clover ..... Muzzey & Hopkins, Lakeport	S	95.50	74	94
7230	Red Clover (Pan American) ..... Nashua Grain Co., Nashua	A	98	S	90
7199	Red Clover (Pan American, Domestic) ..... F. W. Neal & Co., Dover	S	98.50	S	90
7212	Red Clover (Eureka, Imported) .... F. W. Neal & Co., Dover	S	99.25	S	90
7221	Red Clover (Imperator) ..... W. F. Neal, Derry	96.28	98	S	90
7342	Red Clover (Domestic) ..... Pike & Gale, Littleton	S	97.32	S	91
7196	Red Clover (Imported) ..... S. A. Schurman & Son, Portsmouth	S	99	S	90
7179	Red Clover (Medium, 24575—1) .... J. H. Seavey, Dover	A	94	S	95
7377	Red Clover (241542, Medium) ..... Frank Smith Co., Lancaster	76.52	99.02	S	94
7378	Red Clover (241329—30 Medium) .. F. B. Spaulding Co., Lancaster	S	99.26	S	95
7251	Red Clover (6730) ..... C. P. Stevens Co., Franklin	S	99	S	88
7286	Red Clover (Imported) ..... Strafford Co. Grain Mill, Rochester	A	98.62	S	90
7237	Red Clover (201507, Ace, Medium Domestic) ..... Thompson & Hoague Co., Concord	S	98.02	S	94
7059	Red Clover (Choice) ..... A. J. Turcotte, Newmarket	S	98	34	71
7083	Red Clover (Medium Domestic, 24993. Pine Tree) ..... John B. Varick Co., Manchester	S	99	S	92
7085	Red Clover (Pine Tree, Imported, 24—44) ..... John B. Varick Co., Manchester	S	99.75	S	94
7086	Red Clover (Mammoth Native Pine Tree. 235) ..... John B. Varick Co., Manchester	S	99.25	78	92
7116	Red Clover (Mammoth Ace) ..... John B. Varick Co., Manchester	S	98	S	92
7360	Red Clover (241043—44 Pine Tree, Idaho Grown) ..... H. K. Webster Co., Colebrook	S	99	A	85
7106	Red Clover ..... H. L. Webster & Son, Canaan	97.08	98	A	78
7128	Red Clover (Pan American) ..... W. A. Young, Exeter	S	98.50	76	90

A=Above S=Satisfactory

SEED EXAMINATION, 1929—Continued

Sample No.	Kind of Seed, Brand, Name and Address of Dealer	Purity		Germination	
		F'nd	Guaranteed	F'nd	Guaranteed
7305	Red Top (30174, Ace) ..... Ayers & Jenkins, Rochester	S	90.70	75	90
7306	Red Top (30419) ..... Ayers & Jenkins, Rochester	S	91	S	90
7264	Red Top (White Mtn.) ..... W. B. Brown, Ashland	S	95	S	90
7358	Red Top (3043, Ace) ..... F. P. Brown, Whitefield	S	90.40	76.5	90
7302	Red Top (2362) ..... Freeman Carson, Rochester	S	93.80	75	90
7206	Red Top (Choice) ..... R. L. Costello, Portsmouth	A	92	S	92
7134	Red Top (Ace, Fancy, 30846)..... J. Cushing Co., Exeter	A	90	S	90
7187	Red Top (Fancy, 30169) ..... J. Cushing Co., Portsmouth	S	90.70	S	90
7063	Red Top (Pan American) ..... J. H. Griffin, Newmarket	S	92	71.5	90
7125	Red Top (Pan American) ..... C. M. Hildreth & Son, Lebanon	S	92	S	90
7139	Red Top (Pan American) ..... Hilliard & Kimball, Exeter	87.75	92	76	90
7346	Red Top (Fancy) ..... Holbrook Grocery Co., Woodsville	S	87	S	88
7171	Red Top (30122) ..... Jenness Hardware Co., Dover	A	92.10	S	90
7311	Red Top (Pan American) ..... Keegan & French, Franklin	S	92	78	90
7162	Red Top (Pan American) ..... J. A. Lane & Son, Hampton	88.80	92	65	90
7120	Red Top (Fancy, XX) ..... Lewis Bros., Lebanon	A	85	S	85
7216	Red Top (30410, Fancy) ..... McQuesten & Lewis, Manchester	S	93	74.5	90
7310	Red Top (030619) ..... Meredith Grain Co., Meredith	S	90	78	93
7127	Red Top (Ace, 30767) ..... Merrimack Farmers' Exchange, Exeter	S	91.20	S	90
7246	Red Top (Ace, 30714) ..... Merrimack Farmers' Exchange, Concord	S	91	S	90
7247	Red Top (Fancy, 3072) ..... Merrimack Farmers' Exchange, Concord	S	90.20	S	90
7071	Red Top (Pan American) ..... J. J. Moreau & Son, Manchester	S	92	S	90
7263	Red Top ..... Muzzey & Hopkins, Lakeport	91.66	95	S	90
7229	Red Top ..... Nashua Grain Co., Nashua	S	92	72	90
7359	Red Top (30171, Ace, Fancy) ..... D. A. Noyes & Son, Colebrook	S	92.10	76	90
7178	Red Top (Pine Tree, 308014) ..... J. H. Seavey, Dover	87.02	90	S	90
7308	Red Top (Fancy) ..... C. P. Stevens Co., Franklin	A	91.64	69	90
7284	Red Top (Fancy, No. 1) ..... Strafford Co. Grain Mill, Rochester	S	90	78	90

A=Above S=Satisfactory

SEED EXAMINATION, 1929—Continued

Sample No.	Kind of Seed, Brand, Name and Address of Dealer	Purity		Germination	
		F'nd	Guaranteed	F'nd	Guaranteed
7236	Red Top (3072, Ace) ..... Thompson & Hoague Co., Concord	S	90.20	S	90
7088	Red Top (Fancy Pine Tree, 30113) . John B. Varick Co., Manchester	S	93	74	90
7096	Red Top (Ace, 301101) ..... John B. Varick Co., Manchester	S	90	S	90
7126	Red Top (Globe, 3027) ..... John B. Varick Co., Manchester	S	98	S	92
7098	Red Top ..... H. L. Webster & Son, Canaan	88.31	93	S	94
7281	Red Top (Gem) ..... E. T. Willson, Farmington	S	90	S	90
7133	Red Top (Eureka) ..... W. A. Young, Exeter	A	96	S	90
7172	Rye (216264, Rosen) ..... Jenness Hardware Co., Dover	S	99	72.5	92
7117	Rye (6511, Rosen) ..... Manchester Hardware Co., Manchester	S	98	S	88
7182	Rye, Spring (7497) ..... Jenness Hardware Co., Dover	S	98	73.5	90
7189	Rye (74107, Rosen) ..... J. H. Seavey, Dover	S	98	63	90
7089	Rye, Spring (7487) ..... John B. Varick Co., Manchester	S	98	71	90
7105	Soy Beans ..... John B. Varick Co., Manchester	S	98	58	90
7107	Sweet Clover (White Blossom, 25313) John B. Varick Co., Manchester	A	99	S	85
7380	Timothy (6746, Liberty) ..... Abbott Grocery Co., Keene	S	99.60	S	92
7298	Timothy (68072, Pine Tree) ..... Ayers & Jenkins, Rochester	S	99.65	S	95
7254	Timothy ..... Belknap Co. Farmers' Exchange, Laconia	S	99.75	S	94
7289	Timothy ..... P. W. Bragg, Farmington	S	98	S	90
7371	Timothy (68613, Pine Tree) ..... F. P. Brown, Whitefield	S	99.60	S	94
7335	Timothy (8506) ..... Chase Grain Mill, Plymouth	98.67	99.58	S	94
7160	Timothy ..... The E. G. Cole Co., Hampton	S	99.05	S	96
7188	Timothy (Choice) ..... R. L. Costello, Portsmouth	A	94	S	99
7369	Timothy (68750, Pine Tree) ..... G. B. Currier Co., Colebrook	S	99.65	S	94
7129	Timothy (68135, Pine Tree) ..... J. Cushing Co., Exeter	S	99.65	S	94
7183	Timothy (Pine Tree, 69034) ..... J. Cushing Co., Portsmouth	S	99.55	S	94
7164	Timothy (Pan American) ..... S. A. Dow & Son, North Hampton	S	96.60	S	92
7343	Timothy (Gold Medal) ..... The Depot Store, Inc., Littleton	S	99.75	S	90
7344	Timothy (White Mtn. Extra Fancy) The Depot Store, Inc., Littleton	S	99.65	S	95

A=Above S=Satisfactory

SEED EXAMINATION, 1929—Continued

Sample No.	Kind of Seed. Brand, Name and Address of Dealer	Purity		Germination	
		F'nd	Guaranteed	F'nd	Guaranteed
7234	Timothy (Pine Tree, 69004) ..... Derry Farmers' Exchange, Derry	S	99.65	S	94
7315	Timothy (68800, Pine Tree) ..... W. E. Dunbar & Sons, Manchester	S	99.65	S	94
7334	Timothy (85211, Matrix) ..... Farmers' Grain Store, Ashland	S	99.62	S	90
7115	Timothy (Herald) ..... S. J. Ford, Danbury	A	97	S	90
7322	Timothy (624B, Liberty) ..... C. J. Goss, Lakeport	S	99.60	S	92
7062	Timothy (Pan American) ..... J. H. Griffin, Newmarket	S	99.60	S	92
7104	Timothy (Pan American) ..... C. M. Hildreth & Son, Lebanon	S	99.60	S	90
7110	Timothy (Pan American) ..... C. M. Hildreth & Son, Lebanon	S	99.60	S	92
7124	Timothy (White Mtn.) ..... C. M. Hildreth & Son, Lebanon	S	99.65	S	95
7145	Timothy (Pine Tree) ..... Hilliard & Kimball, Exeter	S	99.65	S	96
7345	Timothy ..... Holbrook Grocery Co., Woodsville	S	98	S	92
7180	Timothy (Pine Tree, 68090) ..... Jenness Hardware Co., Dover	S	99.65	S	95
7280	Timothy ..... J. Jones & Son, Alton	S	99.60	S	90
7368	Timothy (68917, Pine Tree) ..... C. C. King Co., Whitefield	S	99.60	S	94
7157	Timothy (Pan American) ..... J. A. Lane & Co., Hampton	S	99.60	S	90
7121	Timothy (XXX, Lot 1) ..... Lewis Bros., Lebanon	S	99	S	93
7077	Timothy (Pine Tree, 67829) ..... Manchester Hardware Co., Manchester	S	99.65	S	95
7220	Timothy (Pine Tree, 69176) ..... McQuesten & Lewis, Manchester	S	99.60	S	94
7325	Timothy (68354, Pine Tree) ..... Meredith Grain Co., Meredith	S	99.60	S	95
7153	Timothy (68800, Pine Tree) ..... Merrimack Farmers' Exchange, Exeter	S	99.65	S	94
7244	Timothy (67536, Pine Tree) ..... Merrimack Farmers' Exchange, Concord	S	99.60	S	94
7051	Timothy (Pan American) ..... J. J. Moreau & Son, Manchester	S	99.60	S	90
7270	Timothy (White Mtn.) ..... Muzzey & Hopkins, Lakeport	S	99.65	S	95
7222	Timothy (Imperator) ..... W. F. Neal Co., Derry	S	99	S	90
7370	Timothy (691117, Pine Tree) ..... D. A. Noyes & Son, Colebrook	S	99.60	S	94
7316	Timothy (Gold Medal) ..... C. W. Roberts, Meredith	S	99.75	S	94
7320	Timothy (66183, Pine Tree) ..... H. C. Sanborn, Laconia	S	99.60	S	94

A=Above S=Satisfactory

SEED EXAMINATION, 1929—Continued

Sample No.	Kind of Seed, Brand, Name and Address of Dealer	Purity		Germination	
		F'nd	Guaranteed	F'nd	Guaranteed
7168	Timothy S. A. Schurman & Son, Portsmouth	S	98	S	90
7194	Timothy (Pan American) S. A. Schurman & Son, Portsmouth	S	99.60	S	90
7177	Timothy (68750, Pine Tree) J. H. Seavey, Dover	S	99.65	S	94
7252	Timothy (66—516) C. P. Stevens Co., Franklin	S	99.65	S	95
7292	Timothy (Bay State) Strafford Co. Grain Mill, Rochester	S	99.65	S	95
7238	Timothy (68800, Pine Tree) Thompson & Hoague Co., Concord	S	99.65	S	94
7058	Timothy (Breck) A. J. Turcotte, Newmarket	S	98	S	91
7072	Timothy (Durham, 68091) John B. Varick Co., Manchester	S	99.60	S	94
7075	Timothy (Durham, 6794—3) John B. Varick Co., Manchester	S	99.60	S	94
7087	Timothy, (Jersey, 680391) John B. Varick Co., Manchester	S	98	S	91
7094	Timothy (Pine Tree, 68920) John B. Varick Co., Manchester	S	99.60	S	94
7095	Timothy (Pine Tree, 68917) John B. Varick Co., Manchester	S	99.60	S	94
7118	Timothy (Jersey, 67920) John B. Varick Co., Manchester	S	98	S	91
7148	Timothy (Pan American) W. A. Young, Exeter	S	99.60	S	90
7313	Vetch, Spring Keegan & French, Franklin	S	98	S	90
7131	Wheat (75321, Marquis Type) Merrimack Farmers' Exchange, Exeter	S	98.50	S	96
7242	Wheat (75330, Marquis Type) Merrimack Farmers' Exchange, Concord	S	99.86	S	95
7073	Wheat, Spring (Marquis) John B. Varick Co., Manchester	S	99.60	S	90
7357	Wheat, Spring (241, Marquis Type). H. K. Webster Co., Colebrook	S	99	S	97
7186	White Clover (Choice) R. L. Costello, Portsmouth	S	97	S	95
7112	White Clover (Choice) C. M. Hildreth & Son, Lebanon	S	96	S	90
7138	White Clover Hilliard & Kimball, Exeter	S	97	S	95
7354	White Clover (White Mtn.) Holbrook Grocery Co., Woodsville	84.20	90	S	92
7076	White Clover (26—33) Manchester Hardware Co., Manchester	S	97.60	S	71
7052	White Clover (Choice) J. J. Moreau & Son, Manchester	S	96	S	90
7169	White Clover (25459—60) J. H. Seavey, Dover	S	95.75	S	94
7082	White Clover (26516) John B. Varick Co., Manchester	S	98.05	S	94

A=Above S=Satisfactory

SUMMARY TABLE

Showing General Results of Seed Inspection Work
for the year ending June 30, 1929

Kind of Seed	Number of Samples	Purity Compared to Guarantee			No Guarantee	Germination Compared to Guarantee			No Guarantee
		Above	Satisfactory	Below		Above	Satisfactory	Below	
Alfalfa	9	1	8	0	0	1	5	2	1
Alsike	31	2	26	3	0	0	26	5	0
Barley	14	0	14	0	0	2	12	0	0
Bluegrass, Canada	1	0	1	0	0	0	1	0	0
Bluegrass, Kentucky	2	0	1	1	0	0	2	0	0
Buckwheat	3	0	3	0	0	0	3	0	0
Canada Field Peas	2	0	2	0	0	0	2	0	0
Corn	1	0	0	0	1	0	0	1	0
Millet, Golden	2	0	2	0	0	0	1	1	0
Millet, Hungarian	36	5	26	5	0	0	24	12	0
Millet, Japanese	43	6	23	14	0	2	38	3	0
Oats	22	0	22	0	0	0	21	1	0
Orchard Grass	1	1	0	0	0	0	0	1	0
Rape	3	0	3	0	0	0	3	0	0
Red Clover	51	9	32	10	0	5	38	8	0
Red Top	35	6	24	5	0	0	21	14	0
Rye	5	0	5	0	0	0	1	4	0
Soy Beans	1	0	1	0	0	0	0	1	0
Sweet Clover	1	1	0	0	0	0	1	0	0
Timothy	55	2	52	1	0	0	55	0	0
Vetch	1	0	1	0	0	0	1	0	0
Wheat	4	0	4	0	0	0	4	0	0
White Clover	8	0	7	1	0	0	8	0	0
	331	33	257	40	1	10	267	53	1

PAS
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no.233-250